

REMARKS

Claims 1 and 18 have been amended as set forth above. The feature "control circuitry coupled to the transmission member for determining whether the action potential is detected from the signal transmitted by the transmission member," originally specified in dependent claim 18, has been incorporated into independent claim 1 to more clearly set forth the transmitted signal corresponding to a target site is used by a control circuit for detecting an action potential. Claims 1-34 are pending.

I. Claim Rejections – 35 USC § 103

Claims 1-34 stand variously rejected under 35 U.S.C. 103(a) as being unpatentable over Fox et al. (U.S. Pat. No. 5,041,108, hereinafter "Fox"), Bassen et al. (U.S. Pat. No. 5,678,550, hereinafter "Bassen") and Shelton (U.S. Pat. No. 5,836,989, hereinafter "Shelton").

The presently claimed invention teaches an elongated body extending from a proximal end to a distal end engaged along a target site; a delivery member extending through the elongated body to deliver a voltage sensitive dye to the target site; a transmission member extending through the elongated body to transmit a signal associated with an action potential corresponding to the target site, and control circuitry for determining whether the action potential is detected from the transmitted signal.

Fox teaches a laser microsurgical method and apparatus for safely treating occluded body lumens with laser energy that is designed to minimize the possibility of damage to or perforation of the surrounding tissue of the lumen. As described at col. 7, lines 16-20, a laser fiber bundle transmits laser energy to destroy the tissue of luminal occlusions, such as atheromatous plaque and the like. Luminal occlusions such as atheromatous plaque generally do not contain excitable tissue in which an action potential, either intrinsic or evoked, will occur. Therefore, while Fox teaches fibers that are used for transmitting a tissue destroying laser energy, Fox does not teach or suggest a transmission member

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to transmit a signal associated with an action potential corresponding to the target site. As such, Fox does not teach or suggest a control circuit for determining if an action potential is detected from the transmitted signal. Fox teaches away from the claimed invention since laser energy to destroy tissue would destroy the ability of the tissue to generate an action potential response to either intrinsic or evoked depolarizations.

Bassen teaches an apparatus and method for detecting electrical activity in areas of tissue. The apparatus includes a multi-fibered endoscope to detect optically electrical activity over an area of tissue, rather than simply at one point at a time (Col. 3 lines 20-24). Electrical activity of the area of tissue, R , is calculated by taking a ratio of the change in the time dependent signal from an electrically sensitive dye to the change in the time dependent signal from the electrically insensitive dye during an incremental time period. (Col. 6, lines 27-41). The calculated electrical activity, R , is not an action potential signal and does not represent detection of an action potential signal. Accordingly, Bassen does not teach or suggest detecting an action potential as set forth in the presently claimed invention.

Shelton teaches a medical device having a primary operating function and a trial operating function that are enabled or disabled in a time dependent manner to permit their comparison and evaluation in a patient. Shelton generally describes a lead with one or more exposed conductive electrodes for receiving electric cardiac signals or for delivering electrical pacing pulses. According to Shelton, cardiac stimulators typically process patient electrograms and acquire or measure physiological data for diagnosis. Shelton does not teach or suggest detecting an action potential from a transmitted signal.

None of the references, alone or combined, teach or suggest determining whether an action potential is detected from a transmitted signal corresponding to a target site as set forth in independent claims 1, 19 and 27. Accordingly, independent claim 1 and claims 2-18 dependent thereon, independent claim 19 and claims 20-26 dependent thereon, and independent claim 27 and claims 28

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through 34 dependent thereon are patentably distinct from the cited references, alone or in combination.


III. Conclusion

Applicant respectfully asserts that the references fail to anticipate or render obvious the indicated claims. As such, Applicant respectfully asserts that the present claims are in condition for allowance and notice of the same is earnestly solicited.

Respectfully submitted,

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